



1731

Applicant Initiated Interview Request Form

Application No.: 09/989,799 First Named Applicant: Sheng-Guo Wang
Examiner: John Hoffmann Art Unit: 1731 Status of Application: Final Action

Tentative Participants:

(1) Sheng-Guo Wang (2) _____
(3) _____ (4) _____

Proposed Date of Interview: 3-8-2005 or 3-9-2005 Proposed Time: 10~10:30 AM (AM/PM)
or any suitable AM time
for Examiner

Type of Interview Requested:

(1) ☐ Telephonic (2) ☒ Personal (3) ☐ Video Conference

Exhibit To Be Shown or Demonstrated: ☐ YES ☒ NO

If yes, provide brief description: _____

Issues To Be Discussed

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art 35USC112; 37CFR1.75(c)	Discussed	Agreed	Not Agreed
(1) <u>Rej.; Obj.</u>	<u>21-25, 34; 29</u>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) <u>Rej.</u>	<u>21-23</u>	<u>5073179</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) <u>Rej.</u>	<u>24-25</u>	<u>5073179, 6220057</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) <u>Rej.</u>	<u>26-28, 30-34</u>	<u>5551967, 6220057</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Continuation Sheet Attached					

Brief Description of Arguments to be Presented: Please see the attached Continuation Sheets.

An interview was conducted on the above-identified application on _____.

NOTE: This form should be completed by applicant and submitted to the examiner in advance of the interview (see MPEP § 713.01).

This application will not be delayed from issue because of applicant's failure to submit a written record of this interview. Therefore, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible.

Sheng-Guo Wang 2-25-2005
Applicant/Applicant's Representative Signature

Examiner/SPE Signature

Sheng-Guo Wang

Typed/Printed Name of Applicant or Representative

Registration Number, if applicable

This collection of information is required by 37 CFR 1.133. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Brief Description of Arguments to be Presented

1. In the F.O.A., Examiner cites two new reference patents Yoshimura 5073179 and Yamamura 6220057. However, the present invention is novel, useful and unobvious over Yoshimura 5073179 and Yamamura 6220057. The latter reference is also in different scope and content for manufacturing glass ingot, not for optical fiber drawing process.
2. In general, the important fact is that Yoshimura 5073179, Urruti 5551967 and Kenmochi 6178778 lack the substantial features of the present invention as described in the specification, claimed in Claims 21-34, and briefly summarized in the attached **Substantial Feature Comparison Table** below.
3. The proposed modification of Urruti 5551967 by omitting the hermetic coating destroys the purpose of Urruti's invention and damages the product quality of the optical fiber.
4. It is a well-know and clear fact that fiber manufacturing has two major distinct processes, i.e., the preform manufacturing and the optical fiber drawing. They are totally separated processes and not combined due to a lot of technical difficulties. Please refer to the prior art.
5. Even as modified or combined of Yoshimura, Urruti, Kenmochi with Yamamura, the resultant teaching still omit one or more of the Applicant's claimed features. Please refer to the **Substantial Feature Comparison Table**.
6. The prior art never taught or mentioned the methods proposed by applicant's invention, even though a series of patents have been issued for this complex optical fiber drawing process, and thus, the invention as a whole is unobvious.
7. Yamamura clearly does not teach a step of measuring the outermost diameter of final ingot after unavoidable shrinkage in his process. His last measurement of ingot is in the furnace 10 as shown in his Figs. 1 and 5.
8. Even if the primary reference's invention were combined with Yamamura method as proposed in the F.O.A., this assumed control method would still omit the claimed substantial features of the applicant's invention, e.g., new measurement and novel control method principles.
9. The sentence regarding "bare fiber" in paragraph 0003 under Section 2 Description of the

Related Art is cited from Yoshimura 5073179. The term bare fiber has been well used, such as in Yoshimura 5073179, and Urruti 5443610 and 5551967, which were examined by the same Examiner.

10. In the present invention, bare fiber is clearly shown and pointed out by 5 in the figures, and described and claimed as the fiber before any coating in the specification and claims. For example, Claim 26 clearly states “measuring the outer diameters of said optical fiber, which is bare before coating, at two or more different locations by respective measurement devices before the coating”.
11. The “finished bare fiber” is still a bare fiber, just before the coating step, immediately above the coating device, and measured by monitor 40 in Fig. 1 as stated in paragraphs 0032, 0037, 0042, 0053 (Fig. 1), 0061, 0078 and 0079.
12. Yoshimura 5073179 does not teach any of present invention. What Yoshimura 5073179 anticipated is “but also, as a whole, limiting such factors described above” as he clearly stated in his invention (col. 3, lines 31-39).
13. Yoshimura 5073179 uses a preform diameter of 25mm. If Yoshimura had monitored preform diameter in his optical fiber drawing process, the unavoidable deviation of the preform diameter would have been listed or mentioned in his invention. A more important fact is what he stated in his invention as listed in the above item 12. His Figures 1-3 also prove this fact, i.e., his process does not monitor/measure the preform diameter, but uses a preset preform diameter value, such as 25mm.
14. Regarding robustness, Claim 21 recites “robust performance of said process and robust quality of said optical fiber, against deviations of the preform outer diameter and shape at different locations and against deviations of various preforms, making a robust diameter-controlled optical fiber”. Yoshimura 5073179 and Urruti 5551967 lack this feature robustness.
15. In measuring, where to locate monitor is very important and it does significantly limit the claim and is patentable if it is new, useful and unobvious. A typical example is Yoshimura US 5073179.
16. Regarding the term “predetermined allowable diameter deviation value”, please refer to

Record of the Substance of the Interview of 8-30-2004, page 6, XII. Item 5. The key words are “allowable diameter deviation value” that is from the product specification and/or customer’s requirement, and is predetermined as a common sense.

17. The F.O.A. statement of “IT would have been obvious to control the feed speed – because if it was randomized, it might feed it too quick or too slow” is not correct, lack any basis and against the fact. Please refer to Yoshimura Fig. 1 or Yamamura Fig. 1 and the specifications.
18. Yoshimura does not teach using preform diameter deviation to adjust the feeding speed and drawing speed. He does teach limiting the preform diameter deviation (refer to item 12). However, the specific control method for controlling the feeding speed and drawing speed by utilizing preform measurement is stated in Claim 25 of the present invention.
19. Paragraph 2, page 8, of the F.O.A. lacks knowledge of automatic control that is not simple, especially for complex process control, such as optical fiber drawing process control. The key issues are what is to be controlled (e.g., weight or diameter), what measurement system is (e.g., locations, technique ...), what actuator system is and controls (e.g., feeding speed or drawing speed), how to control (e.g., static, dynamical, robust ...), what control principle is, and so on. In the prior art, the feeding speed control does not depend on the preform diameter deviation. Because the prior art has no preform monitor in the optical fiber drawing process, therefore when the preform diameter changes, the feeding speed has no any corresponding adjustment to the dynamic changes of the preform diameter.
20. Urruti 5551967 lacks the major steps, e.g., “measuring the outer diameters of said optical fiber, which is bare before coating, at two or more different locations by respective measurement devices before the coating”, as claimed in Claim 26 of the present invention.
21. Urruti 5551967 does not anticipate the present invention claimed in Claim 26. Otherwise, he would not have taught that “The second diameter measurement is made between hermetic coater 54 and protective coater 56” and “Since the fiber has been hermetically-coated at this point, the technique used for this measurement must be operable in the presence of such a coating” in col. 4, lines 60-66, US 5551967.
22. The hermetic coating is Required and Desired that can not be omitted from Urruti 5551967. Neither Urruti nor Applicant does omission of hermetic coating in Urruti 5551967.

Therefore, the F.O.A. has no any basis to cite "Omission of an Element and its Function is Obvious if the Function of the Element is Not Desired" for Urruti 5551967 and the present invention. Also, please refer to the above item 3 and the disadvantage of fiber shadow technique (col. 2, lines 48-54, Urruti 5551967). It is clear that Claim 26 is unobvious.

23. Claim 27 is a dependant claim of Claim 26 and is a fortiori patentable over Urruti. Figure 5 in Urruti clearly shows that one target diameter is for the shadow gauge that is clearly different from the present invention claimed in Claim 27. Please refer to above items 20-22.

24. Yamamura 6220057 is for drawing glass ingot, but not for drawing optical fiber.

25. Yamamura 6220057 (2001) never suggests a combination with either Yoshimura 5073179 or Urruti 5551967.

26. Yamamura 6220057 new measurement above the heating is used for controlling the heating furnace temperature distribution when "a measurement of the outer diameter measuring device 6a exceeds a preset value". Further, this measurement is not a preform measurement. Furthermore, his both measurements are within the furnace 10. All these are totally different from the present invention as described in the specification and claimed in the claims.

27. Neither Yamamura nor Urruti suggested their combination. Even if their processes were combined as proposed in the F.O.A., their combined fiber drawing process would still have omitted Applicant's claimed features in Claims 28-34. Therefore, it is clearly that the present invention is unobvious over Yoshimura and Urruti in view of Yamamura. Please also refer to the above items 4-8.

28. In view of the above items, Claim 21-34 are unobvious and patentable over the prior art.

29. The F.O.A. states "As to the limitations that refer to the control being "based on" diameters, deviations, etc. Such is inherent. Everything is inherently "based on" everything else."

However, this statement is not correct because it is Not Inherent. Further, the term "based on" is well used in the claims in many issued patents, e.g., Yoshimura 5073179 and Kenmochi 6178778.

30. The F.O.A. states "a 2 cm diameter preform would have 4 times the mass as a 1 cm preform". However, this statement is not completely correct because the mass can not be determined only by the diameter. For example, a preform of 2cm diameter and 1cm long

would have less mass than a preform of 1cm diameter and 10 cm long even though they have a same material density.

31. The comment from line 18 of page 10 to line 4 of page 11 of the F.O.A. has mistakes. For example, to perform routine experimentation can not dynamically provide a new sample data dynamically in real time.

Claim 34 recites “the control signals are further based on fluctuation data from the current measurements and measurement history data over a period the history, whereby ... against the fluctuations of the diameters, time-lag and time-lead of said measurements corresponding to the heating and melting stage,” These measurement history data of the preform are used against time-lag and time-lead of said measurements corresponding to the heating and melting stage. To perform routine experimentation can not provide this function because the being heated and drawn preform is not the previous performed preform samples, and the diameter deviation distribution of each preform along the axis is not exact same as another preform. In this sense, the comment is incorrect.

32. The F.O.A. comments that “Furthermore see the rejection which indicates it would have been obvious to remove the first coater of Urruti if one didn’t want the hermetic coating.”

Please refer to the above items 3 and 22.

33. The F.O.A. states “Most important, Urruti discloses the same concept that applicant has: measuring at more than one location to get better control of the diameter controlling process.”

However, a most important issue is to identify what to be measured, where to be measured and what related technique to be used for the measurement. This issue is the invention and the key concept in the present invention different from Urruti’s.

34. If the above statement were used for rejection, how to explain Kenmochi 6178778 (2001) after Urruti. The statement does not recognize the important difference and important issues in measuring area and control area. However, Applicant highly honors these inventions including Yoshimura, Urruti and Kenmochi for the fiber drawing process.

35. The F.O.A. also states “Kenmochi 6178778 which teaches drawing and measuring the diameter at ‘at least locations’. Monitoring the diameter at multiple positions would typically

not an invention.”

Applicant could find the term “at least locations” in Kenmochi 6178778. On the other hand, it is noticed that Kenmochi has several measurements in his process method. However, applicant has pointed out that Kenmochi 6178778 lacks the key features in the claims of the present invention in the Remarks of 10-18-2004. Furthermore, please refer to the above items 33 and 34.

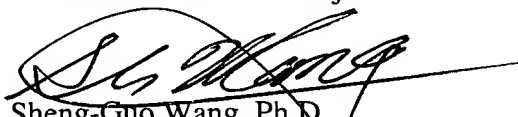
36. The F.O.A. cites “Duplication of Parts” and further states “With any process, the more locations the product is monitored, the better the final product would be.”

First, the present invention is totally not a case of “Duplication of Parts”. Second, the above statement is wrong and not reasonable. Applicant would like to show that this statement is wrong in detail during the requested interview.

37. If those general comments and statements in the F.O.A. were valid, they would have been also valid against Yoshimura 5073179, Urruti 5551967 and Kenmochi 6178778, thus these patents would not have been issued. However, Applicant highly values these references inventions, many of that are using different located sensors. Applicant also highly values his present invention in view of his novel, useful and unobvious methods over these references and the prior art.

38. Claim 29 depends on Claim 28, and Claim 28 depends on Claim 26. Therefore, in fact, Claim 29 depends only on Claim 28. Essentially Claim 29 is not a multiple dependent claim. However, in order to remove any confusion, Claim 29 will be amended by changing “The process as claimed in claim 28, wherein said two or more different locations in claim 26 include ...” to “The process as claimed in claim 28, wherein said two or more different locations include ...”.

39. Personal interview is a very efficient way to exchange opinions and an easy way for both sides to discuss, understand and solve the issues. Thus, following MPEP §713.09, Applicant respectfully requests Examiner to grant one interview after final rejection.


Sheng-Guo Wang, Ph.D.
704-503-0747 (H) 704-687-3265 (O)
2-25-2005

(Dr. Sheng-Guo Wang 2-25-2005)

Substantial Feature Comparison Table

	Optical Fiber Drawing Process	Measurements at different locations for fiber drawing process			Feed speed control using Preform dynamic data	Drawing speed control using Preform dynamic data	Tensor control using Preform dynamic data	New robust control method law
		Preform outer diameter	Bare Fiber Just after heating	Bare Fiber Just before coating or within limited shrinkage before coating				
The Applicant's Invention (US)	X	X	X	X	X	X	X	X
	X	X		X	X	X	X	X
	X	X	X		X	X	X	X
	X	X			X	X	X	X
	X		X	X				X
	X			X				X
Yamamura (JP) US 6220057	(Glass Ingot manufacture)							
Yoshimura (JP) US 5073179	X (1 after furnace before coating)			X				
Urruti (US) US 5551967	X (1 after furnace & 1 after coating)		X					
Kenmochi (JP) US 6178778	X (2 M in furnace, & 1 after heating)		X					